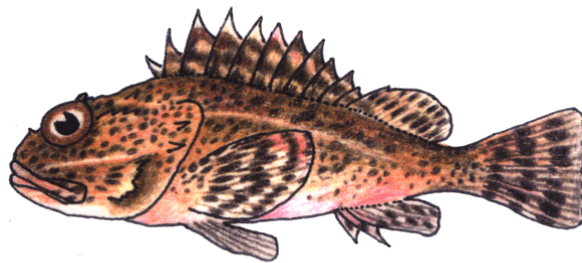


California Scorpionfish, *Scorpaena guttata* 1993-1999 Commercial Catch by Ports & Blocks



Marine Fishery Profiles *Volume 1: Nearshore*

Marine Region GIS Lab

Nancy Wright	Eric Knaggs
Jamie Kum	Bob Leos
Chad King	Colleena Perez



California Department of Fish & Game
Marine Region

December 2000

Santa Barbara



Catch - 95,825 lbs.



Revenue - \$188,920



Effort - 47 lbs./trip



Port Cities



Catch by Pounds



Revenue



Effort - Pounds per Trip



10 Nautical Mile Port Buffers



50 Meter Contour Lines
out to 600 Meters Depth



California Scorpionfish
Broadest Range
(0 - 185 Meters Depth)



California Scorpionfish
Common Adult Range
(5 - 135 Meters Depth)



1 Nautical Mile Coastline Buffer



40 Fathom Contour Line

Scorpionfish, 1993-1999
Commercial Market
Catch by Block (lbs.)



173,000 - 231,000



116,000 - 173,000



58,000 - 116,000



500 - 58,000

Scorpionfish, 1993-1998
CPFV Catch by Block
(Number of Fish Caught)



43,000 - 58,000



29,000 - 43,000



14,000 - 29,000



50 - 14,000

Map based on 1993-1999 PacFIN data (ports), 1993-1999 California Department of Fish & Game Commercial Landing Receipts (blocks), & 1993-1998 California Department of Fish & Game CPFV Logbook data (block centroids).

Port of Los Angeles



Catch - 413,064 lbs.

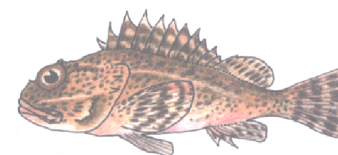


Revenue - \$701,408



Effort - 59 lbs./trip

Southern California



California Scorpionfish, *Scorpaena guttata*
1993-1999 Commercial Catch by Ports & by Block

California Department of Fish & Game

San Diego



Catch - 110,756 lbs.



Revenue - \$165,922



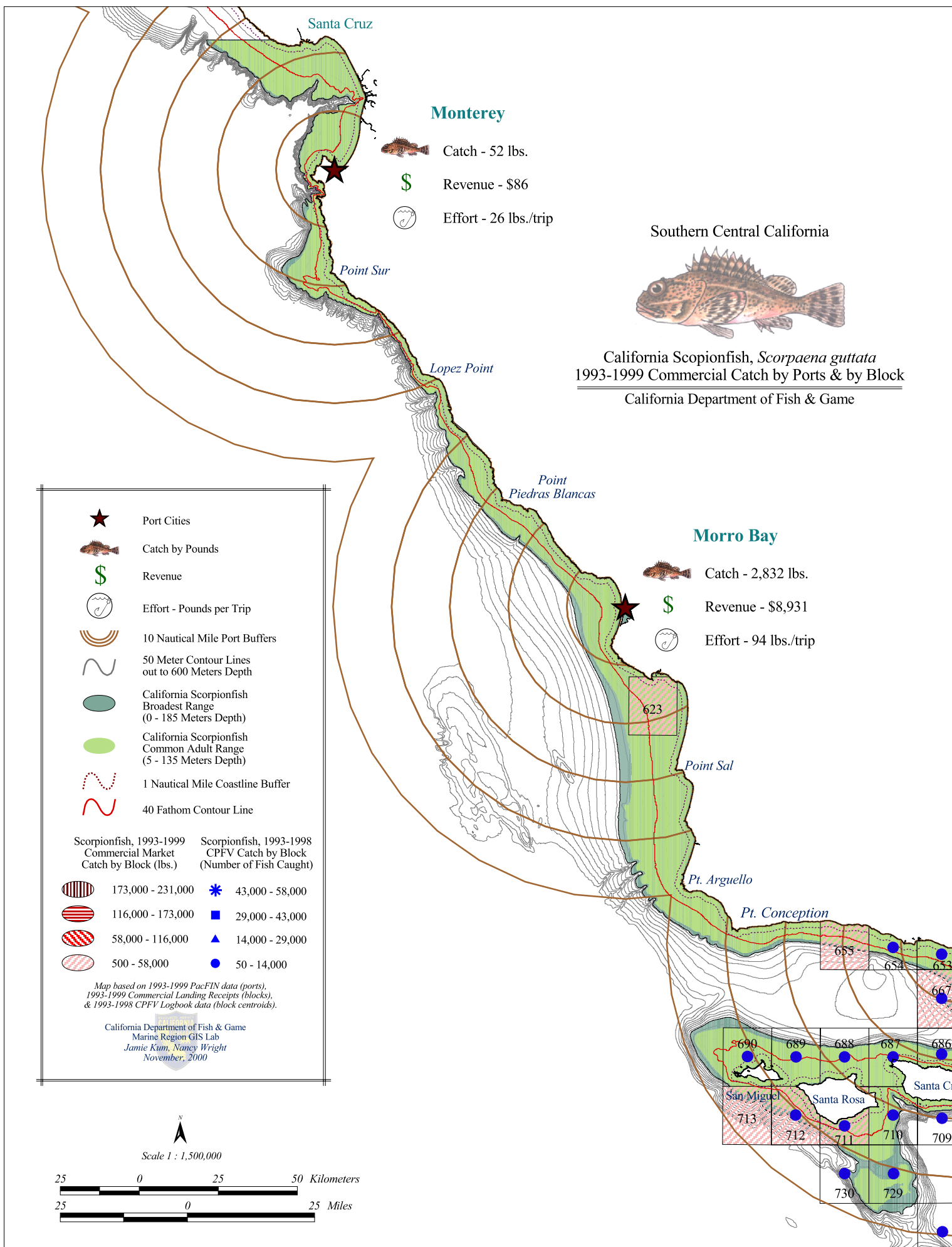
Effort - 52 lbs./trip

Scale 1 : 1,500,000

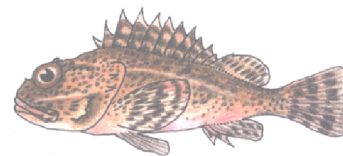
25 0 25 50 Kilometers

25 0 25 Miles

California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
November, 2000



Northern Central California



California Scorpionfish, *Scorpaena guttata* 1993-1999 Commercial Catch by Ports & by Block

California Department of Fish & Game

Bodega Bay



Catch - 12 lbs.



Revenue - \$45



Effort - 4 lbs./trip

San Francisco



Catch - 60 lbs.



Revenue - \$118



Effort - 30 lbs./trip

Half Moon Bay

Point Año Nuevo

Santa Cruz

Monterey



Catch - 52 lbs.



Revenue - \$86



Effort - 26 lbs./trip

Point Sur

Lopez Point

Point Piedras Blancas



Port Cities



Catch by Pounds



Revenue



Effort - Pounds per Trip



10 Nautical Mile Port Buffers



50 Meter Contour Lines
out to 600 Meters Depth



California Scorpionfish
Broadest Range
(0 - 185 Meters Depth)



California Scorpionfish
Common Adult Range
(5 - 135 Meters Depth)



1 Nautical Mile Coastline Buffer



40 Fathom Contour Line

Scorpionfish, 1993-1999
Commercial Market
Catch by Block (lbs.)

Scorpionfish, 1993-1998
CPFV Catch by Block
(Number of Fish Caught)



173,000 - 231,000



43,000 - 58,000



116,000 - 173,000



29,000 - 43,000



58,000 - 116,000



14,000 - 29,000



500 - 58,000



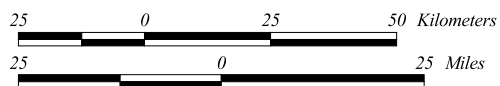
50 - 14,000

Map based on 1993-1999 PacFIN data (ports),
1993-1999 Commercial Landing Receipts (blocks),
& 1993-1998 CPFV Logbook data (block centroids).

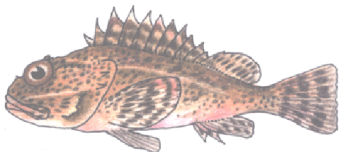
California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
November, 2000



Scale 1 : 1,500,000

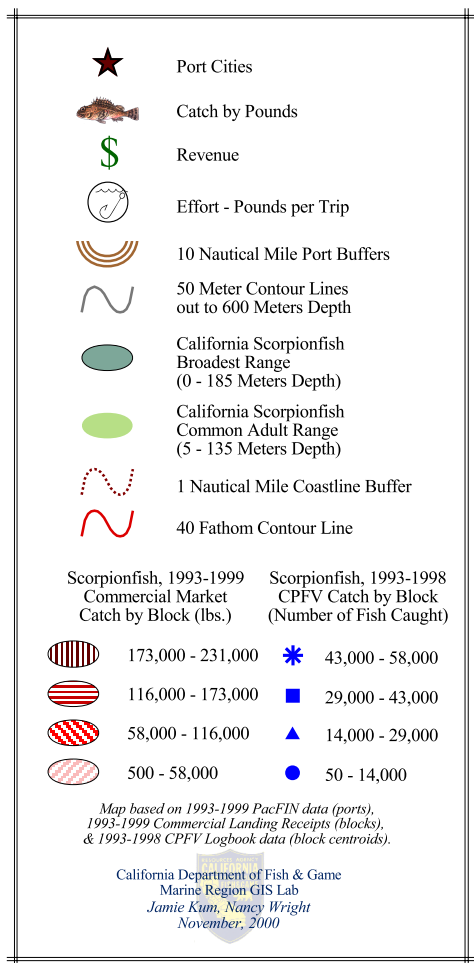


Northern California

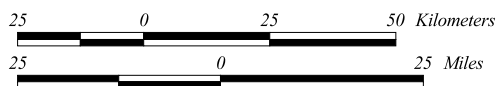


California Scorpionfish, *Scorpaena guttata* 1993-1999 Commercial Catch by Ports & by Block

California Department of Fish & Game



Scale 1 : 1,500,000



Crescent City

Catch - 500 lbs.

\$ Revenue - \$221

Effort - 250 lbs./trip

Eureka

Cape Mendocino

Punta Gorda

Fort Bragg

Catch - 12,414 lbs.

\$ Revenue - \$3,725

Effort - 6,207 lbs./trip

Point Arena

Figure 1. (refer to table 1) CDFG Commercial Receipts Data (1993 - 1999)
 Total Pounds of California Scorpionfish Caught and Average Price per Pound by Month

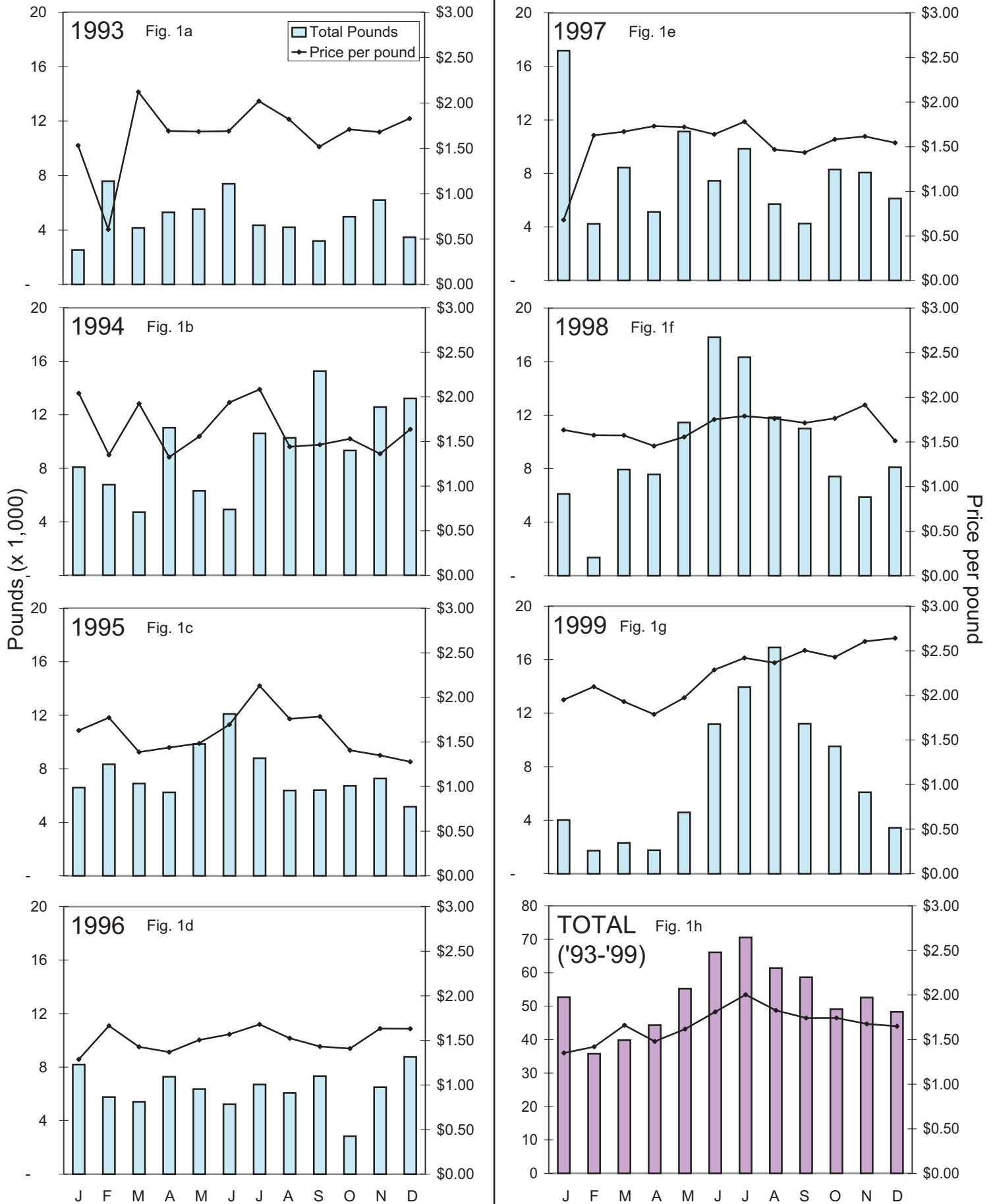


Table 1. (refer to fig. 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of California Scorpionfish Caught and Average Price per Pound by Month

1993
Table 1a

Month	Total Pounds	Price per Pound
Jan	2,529	\$1.53
Feb	7,588	\$0.61
Mar	4,151	\$2.12
Apr	5,295	\$1.69
May	5,529	\$1.68
Jun	7,394	\$1.69
Jul	4,347	\$2.02
Aug	4,206	\$1.82
Sep	3,196	\$1.52
Oct	4,970	\$1.71
Nov	6,204	\$1.68
Dec	3,468	\$1.83
Total	58,877	\$1.61

1997
Table 1e

Month	Total Pounds	Price per Pound
Jan	17,173	\$0.68
Feb	4,232	\$1.63
Mar	8,445	\$1.67
Apr	5,129	\$1.73
May	11,132	\$1.72
Jun	7,451	\$1.64
Jul	9,844	\$1.78
Aug	5,717	\$1.47
Sep	4,255	\$1.43
Oct	8,301	\$1.58
Nov	8,066	\$1.62
Dec	6,135	\$1.54
Total	95,880	\$1.47

1994
Table 1b

Month	Total Pounds	Price per Pound
Jan	8,081	\$2.04
Feb	6,769	\$1.35
Mar	4,719	\$1.92
Apr	11,034	\$1.33
May	6,309	\$1.56
Jun	4,923	\$1.94
Jul	10,611	\$2.08
Aug	10,282	\$1.44
Sep	15,258	\$1.46
Oct	9,335	\$1.53
Nov	12,577	\$1.36
Dec	13,225	\$1.64
Total	113,123	\$1.60

1998
Table 1f

Month	Total Pounds	Price per Pound
Jan	6,113	\$1.63
Feb	1,357	\$1.58
Mar	7,934	\$1.57
Apr	7,579	\$1.45
May	11,451	\$1.56
Jun	17,834	\$1.75
Jul	16,325	\$1.79
Aug	11,834	\$1.76
Sep	10,996	\$1.71
Oct	7,414	\$1.77
Nov	5,883	\$1.91
Dec	8,103	\$1.51
Total	112,822	\$1.69

1995
Table 1c

Month	Total Pounds	Price per Pound
Jan	6,589	\$1.63
Feb	8,331	\$1.77
Mar	6,897	\$1.39
Apr	6,239	\$1.44
May	9,856	\$1.48
Jun	12,101	\$1.69
Jul	8,785	\$2.13
Aug	6,378	\$1.76
Sep	6,404	\$1.79
Oct	6,725	\$1.41
Nov	7,278	\$1.35
Dec	5,159	\$1.28
Total	90,740	\$1.61

1999
Table 1g

Month	Total Pounds	Price per Pound
Jan	4,013	\$1.95
Feb	1,728	\$2.10
Mar	2,302	\$1.93
Apr	1,758	\$1.79
May	4,585	\$1.97
Jun	11,178	\$2.29
Jul	13,944	\$2.42
Aug	16,914	\$2.37
Sep	11,209	\$2.50
Oct	9,525	\$2.43
Nov	6,090	\$2.60
Dec	3,430	\$2.64
Total	86,675	\$2.35

1996
Table 1d

Month	Total Pounds	Price per Pound
Jan	8,198	\$1.29
Feb	5,763	\$1.66
Mar	5,401	\$1.43
Apr	7,279	\$1.37
May	6,358	\$1.51
Jun	5,221	\$1.57
Jul	6,704	\$1.68
Aug	6,073	\$1.52
Sep	7,333	\$1.43
Oct	2,841	\$1.41
Nov	6,498	\$1.63
Dec	8,776	\$1.63
Total	76,444	\$1.51

TOTAL
'93 - '99
Table 1h

Month	Total Pounds	Price per Pound
Jan	52,695	\$1.35
Feb	35,767	\$1.42
Mar	39,849	\$1.66
Apr	44,313	\$1.48
May	55,220	\$1.62
Jun	66,101	\$1.81
Jul	70,560	\$2.00
Aug	61,403	\$1.83
Sep	58,651	\$1.74
Oct	49,111	\$1.74
Nov	52,596	\$1.68
Dec	48,295	\$1.65
Total	634,562	\$1.69

Figure 2. (refer to table 2) Pacific Fisheries Information Network Data (1993 - 1999)
 Total Pounds of California Scorpionfish Caught and Average Price per Pound by Month

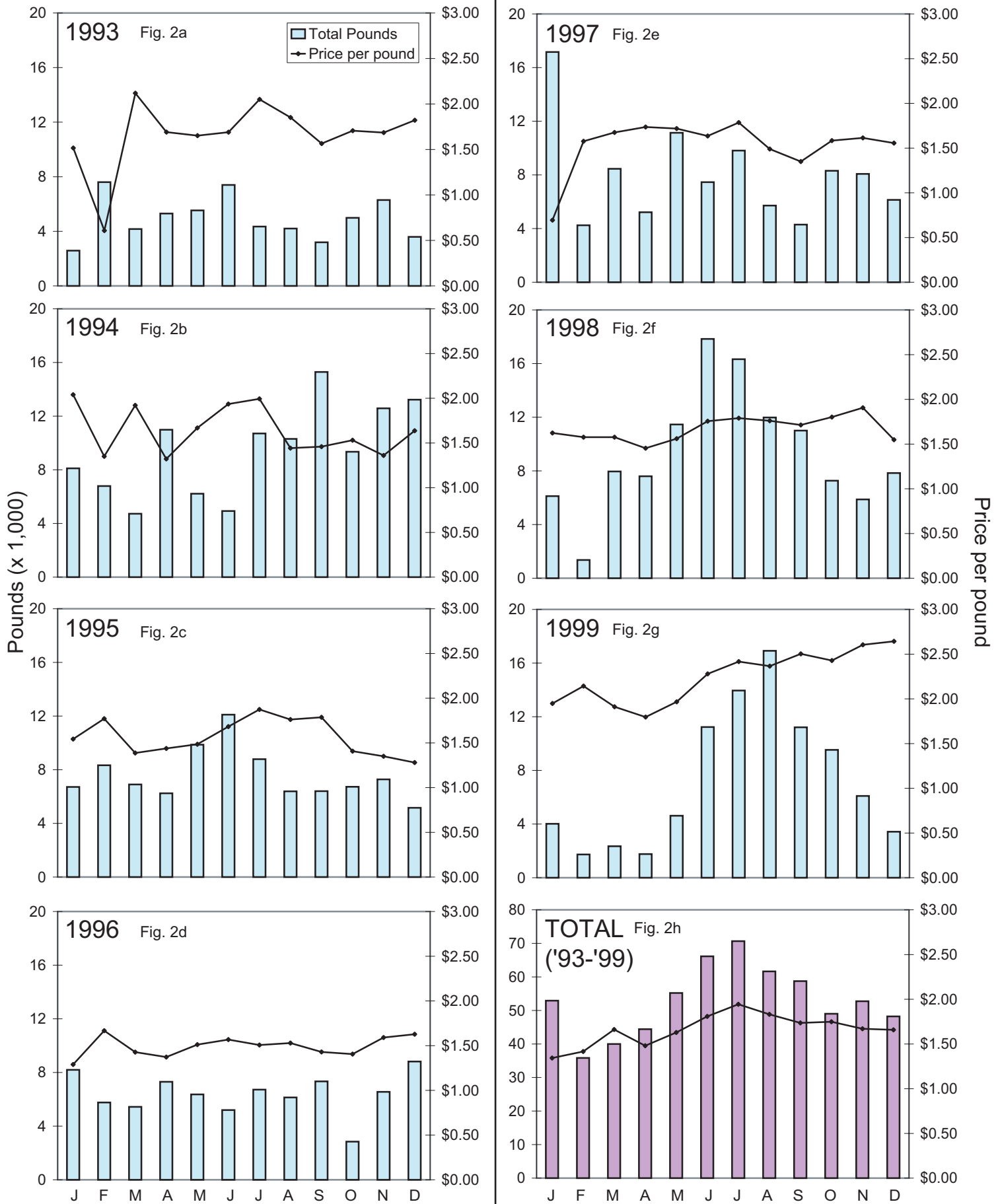


Table 2. (refer to fig. 2) Pacific Coast Fisheries Information Network Data (1993 - 1999)
Total Pounds of California Scorpionfish Caught and Average Price per Pound by Month

1993
Table 2a

Month	Total Pounds	Price per Pound
Jan	2,587	\$1.52
Feb	7,604	\$0.61
Mar	4,168	\$2.12
Apr	5,302	\$1.69
May	5,534	\$1.65
Jun	7,400	\$1.69
Jul	4,349	\$2.05
Aug	4,206	\$1.85
Sep	3,198	\$1.56
Oct	4,992	\$1.71
Nov	6,293	\$1.69
Dec	3,594	\$1.82
Total	59,227	\$1.61

1997
Table 2e

Month	Total Pounds	Price per Pound
Jan	17,162	\$0.69
Feb	4,243	\$1.58
Mar	8,454	\$1.67
Apr	5,214	\$1.74
May	11,140	\$1.72
Jun	7,457	\$1.63
Jul	9,814	\$1.79
Aug	5,712	\$1.49
Sep	4,293	\$1.35
Oct	8,309	\$1.58
Nov	8,073	\$1.61
Dec	6,139	\$1.56
Total	96,010	\$1.47

1994
Table 2b

Month	Total Pounds	Price per Pound
Jan	8,110	\$2.04
Feb	6,787	\$1.35
Mar	4,724	\$1.92
Apr	10,986	\$1.32
May	6,218	\$1.67
Jun	4,926	\$1.94
Jul	10,710	\$1.99
Aug	10,302	\$1.44
Sep	15,295	\$1.46
Oct	9,345	\$1.53
Nov	12,582	\$1.36
Dec	13,229	\$1.64
Total	113,214	\$1.60

1998
Table 2f

Month	Total Pounds	Price per Pound
Jan	6,118	\$1.62
Feb	1,358	\$1.58
Mar	7,958	\$1.58
Apr	7,600	\$1.45
May	11,462	\$1.56
Jun	17,836	\$1.76
Jul	16,325	\$1.79
Aug	11,980	\$1.76
Sep	11,003	\$1.71
Oct	7,267	\$1.80
Nov	5,871	\$1.91
Dec	7,841	\$1.55
Total	112,619	\$1.69

1995
Table 2c

Month	Total Pounds	Price per Pound
Jan	6,715	\$1.54
Feb	8,334	\$1.77
Mar	6,901	\$1.39
Apr	6,241	\$1.44
May	9,868	\$1.48
Jun	12,104	\$1.68
Jul	8,789	\$1.87
Aug	6,388	\$1.76
Sep	6,405	\$1.79
Oct	6,727	\$1.41
Nov	7,282	\$1.35
Dec	5,164	\$1.28
Total	90,918	\$1.58

1999
Table 2g

Month	Total Pounds	Price per Pound
Jan	4,020	\$1.95
Feb	1,732	\$2.14
Mar	2,349	\$1.91
Apr	1,766	\$1.80
May	4,619	\$1.97
Jun	11,230	\$2.28
Jul	13,953	\$2.42
Aug	16,915	\$2.37
Sep	11,212	\$2.50
Oct	9,529	\$2.43
Nov	6,096	\$2.60
Dec	3,429	\$2.64
Total	86,850	\$2.35

1996
Table 2d

Month	Total Pounds	Price per Pound
Jan	8,198	\$1.29
Feb	5,765	\$1.67
Mar	5,440	\$1.43
Apr	7,303	\$1.37
May	6,365	\$1.51
Jun	5,197	\$1.57
Jul	6,719	\$1.51
Aug	6,139	\$1.53
Sep	7,335	\$1.43
Oct	2,842	\$1.41
Nov	6,555	\$1.59
Dec	8,819	\$1.63
Total	76,677	\$1.49

TOTAL
'93 - '99
Table 2h

Month	Total Pounds	Price per Pound
Jan	52,910	\$1.34
Feb	35,823	\$1.42
Mar	39,994	\$1.66
Apr	44,412	\$1.48
May	55,206	\$1.63
Jun	66,150	\$1.81
Jul	70,659	\$1.94
Aug	61,642	\$1.83
Sep	58,741	\$1.74
Oct	49,011	\$1.75
Nov	52,752	\$1.67
Dec	48,215	\$1.66
Total	635,515	\$1.68

Figure 3.(refer to table 3) Commercial Passenger Fishing Vessel Data (1993 - 1998)
Total Number of California Scorpionfish Caught and Catch per 100 Angler Hours (CPUE)

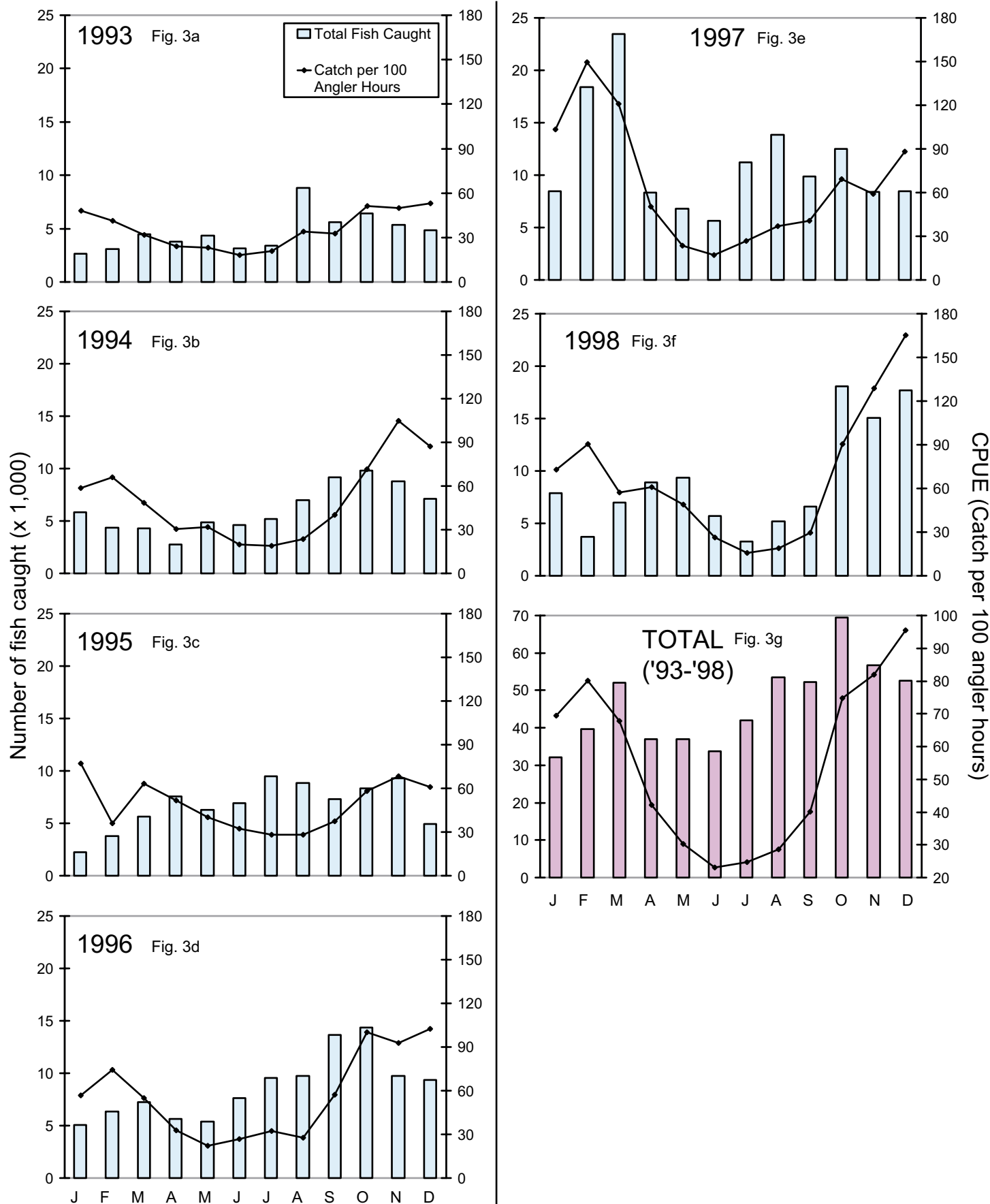


Table 3. (refer to fig. 3) Commercial Passenger Fishing Vessel Data (1993 - 1998)
Total Number of California Scorpionfish Caught and *Catch per 100 Angler Hours (CPUE)

1993

Table 3a

Month	No. Fish Caught	CPUE*
Jan	2,630	47.91
Feb	3,062	41.22
Mar	4,482	31.74
Apr	3,760	24.10
May	4,334	23.08
Jun	3,142	17.91
Jul	3,403	20.99
Aug	8,788	33.88
Sep	5,633	32.86
Oct	6,427	51.41
Nov	5,378	50.00
Dec	4,880	52.97
Total	55,919	32.75

1997

Table 3e

Month	No. Fish Caught	CPUE*
Jan	8,445	103.57
Feb	18,377	149.63
Mar	23,464	120.73
Apr	8,362	50.37
May	6,807	23.34
Jun	5,655	17.26
Jul	11,205	26.68
Aug	13,854	36.83
Sep	9,841	40.61
Oct	12,523	69.09
Nov	8,404	58.95
Dec	8,475	88.19
Total	135,412	51.25

1994

Table 3b

Month	No. Fish Caught	CPUE*
Jan	5,811	58.58
Feb	4,363	66.05
Mar	4,319	48.36
Apr	2,756	30.32
May	4,848	31.62
Jun	4,643	19.77
Jul	5,163	18.81
Aug	7,008	23.57
Sep	9,184	40.21
Oct	9,791	71.65
Nov	8,814	104.83
Dec	7,129	87.20
Total	73,829	40.20

1998

Table 3f

Month	No. Fish Caught	CPUE*
Jan	7,904	72.94
Feb	3,735	90.26
Mar	6,978	57.00
Apr	8,884	61.06
May	9,366	48.78
Jun	5,699	26.25
Jul	3,257	15.56
Aug	5,173	19.05
Sep	6,581	29.34
Oct	18,054	90.44
Nov	15,036	128.63
Dec	17,711	165.08
Total	108,378	55.42

1995

Table 3c

Month	No. Fish Caught	CPUE*
Jan	2,262	77.31
Feb	3,767	35.95
Mar	5,664	63.39
Apr	7,540	51.62
May	6,281	40.02
Jun	6,924	32.33
Jul	9,493	28.25
Aug	8,874	28.01
Sep	7,329	37.28
Oct	8,314	58.24
Nov	9,281	68.38
Dec	4,967	60.96
Total	80,696	41.38

TOTAL
'93 - '98

Table 3g

Month	No. Fish Caught	CPUE*
Jan	32,103	69.46
Feb	39,653	80.17
Mar	52,120	67.85
Apr	36,968	42.15
May	36,997	30.28
Jun	33,686	23.15
Jul	42,053	24.76
Aug	53,426	28.57
Sep	52,235	40.13
Oct	69,450	74.78
Nov	56,662	81.87
Dec	52,544	95.51
Total	557,897	45.28

1996

Table 3d

Month	No. Fish Caught	CPUE*
Jan	5,051	56.83
Feb	6,349	74.43
Mar	7,213	54.84
Apr	5,666	32.85
May	5,361	22.32
Jun	7,623	26.68
Jul	9,532	32.13
Aug	9,729	27.88
Sep	13,667	57.30
Oct	14,341	100.01
Nov	9,749	92.58
Dec	9,382	102.63
Total	103,663	46.52

Abbreviated Life History of the California Scorpionfish (*Scorpaena guttata*)

California scorpionfish (scorpionfish) are easily distinguished from most other California fishes. They are a relatively heavy-bodied species, with strong head and fin spines, ranging in color from red to brown, often with purple blotches and always covered with dark spots. Scorpionfish are a nocturnal species. The sharp spines on the dorsal, anal and pelvic fins are poisonous.

Distribution, Stock Structure and Migration

Scorpionfish are found from Santa Cruz, California south along the Pacific coast of Baja California and into the Gulf of California. Preferring warmer water, this species is common as far north as Santa Barbara. Scorpionfish live from tide pools to depths of about 600 ft. A transient species, scorpionfish tagging studies have shown individuals to travel as far as 350 km. Some of these movements are related to annual spawning migrations, which are sometimes extensive.

Age and Growth

California scorpionfish grow to 17 in. and some live to at least 21 yr. After 4 yr of age, females grow faster than males and reach a larger size.

Reproduction, Fecundity and Seasonality

Although a few scorpionfish mature at 6 in. (1 yr), over 50 percent are mature by 7 in. (2 yr) and all reproduce by 9 in. (4 yr). They have separate sexes and females generally outnumber males. Spawning occurs from April to September, peaking in June and July. Scorpionfish are oviparous, have external fertilization, and females produce eggs imbedded in the gelatinous walls of hollow, pear-shaped "egg-balloons". The egg masses float near the surface and the eggs hatch within 5 days. California scorpionfish make extensive spawning migrations in late spring and early summer, when most adults move to 12 to 360 foot depths, forming large spawning aggregations on or near the bottom. During spawning, these aggregations rise up off the bottom, sometimes approaching the surface. Spawning occurs in the same areas year after year.

Natural Mortality

No natural mortality estimates are available for the scorpionfish.

<i>Diseases</i>	No information is available on diseases in this species.
<i>Predator/Prey Relationships</i>	Scorpionfish are a carnivorous, ambush predator. Small crabs are probably the most important food of the scorpionfish. They are primarily nocturnal and feed at night. Octopi prey on small individuals.
<i>Competition</i>	No information on competitors of adult or juvenile scorpionfish is available.
<i>Critical Habitat</i>	Very young scorpionfish live in shallow water, hidden away in habitats with dense algae and bottom-encrusting organisms. Juveniles and adults are most abundant on hard bottom (such as rocky reefs, sewer pipes and wrecks).
<i>Status of Stocks</i>	No population estimates exist for California scorpionfish. However, data from trawl studies show that there are substantial short-term fluctuations in California scorpionfish abundance within the southern California Bight.